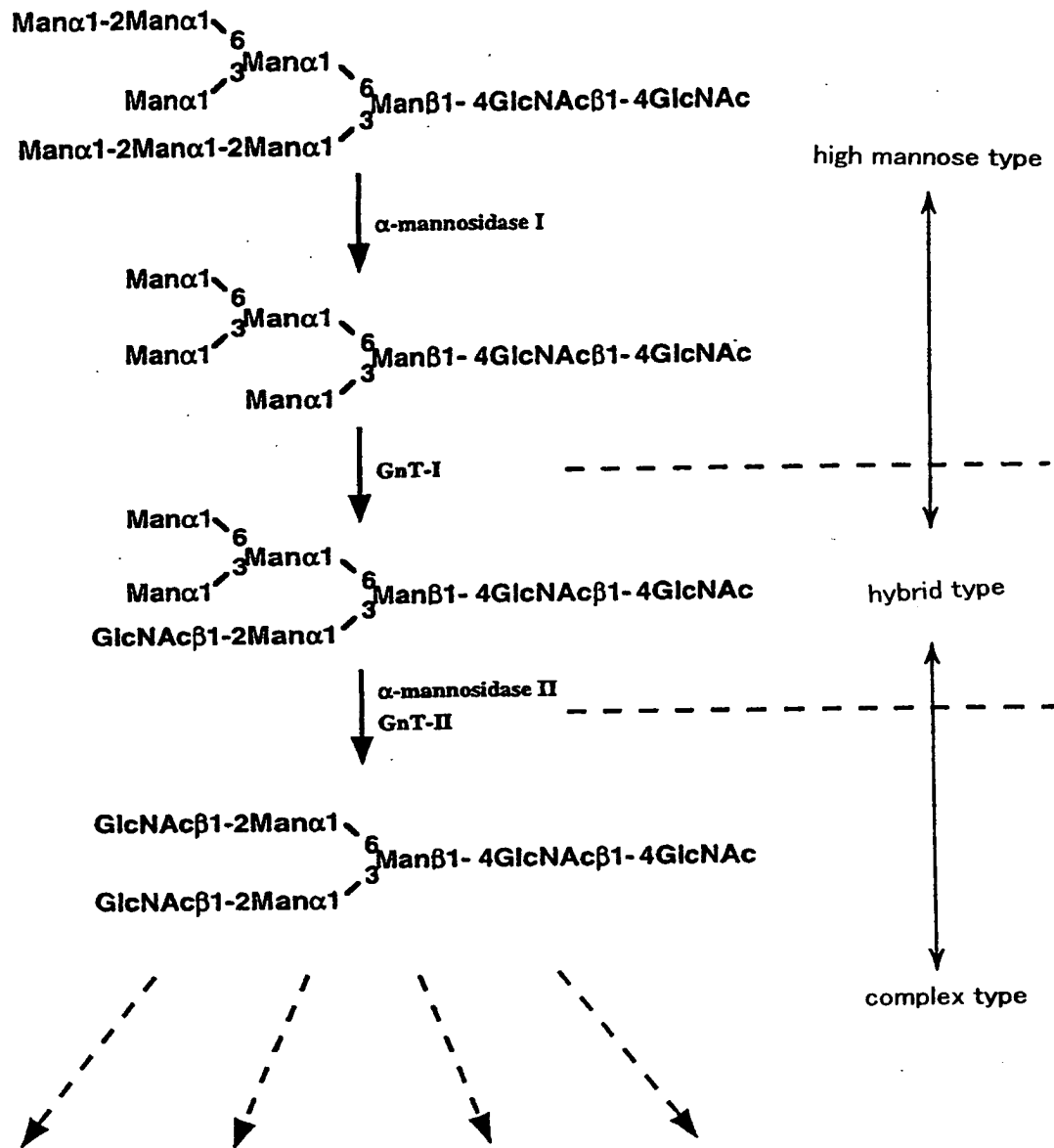


FIG. 1



The diagram illustrates the polymerization of aspartic acid (Asn) into various polyaspartates (A-E) and their interrelationships. The structures are represented as repeating units in a polymer chain, with side groups and linkages indicated by subscripts and symbols.

Structure A: A repeating unit of polyaspartate with side groups $M_{\alpha 2}$, $M_{\alpha 3}$, and $M_{\alpha 6}$ (with a subscript $\alpha 6$ and a superscript $\beta 4$), and a side group $M_{\alpha 2}$ (with a subscript $\alpha 2$ and a superscript $\beta 4$). The main chain is $M_{\alpha 6}$ (with a subscript $\alpha 6$ and a superscript $\beta 4$).

Structure B: A repeating unit of polyaspartate with side groups $M_{\alpha 2}$, $M_{\alpha 3}$, and $M_{\alpha 6}$ (with a subscript $\alpha 6$ and a superscript $\beta 4$), and a side group $M_{\alpha 2}$ (with a subscript $\alpha 2$ and a superscript $\beta 4$). The main chain is $M_{\alpha 6}$ (with a subscript $\alpha 6$ and a superscript $\beta 4$).

Structure C: A repeating unit of polyaspartate with side groups $M_{\alpha 2}$, $M_{\alpha 3}$, and $M_{\alpha 6}$ (with a subscript $\alpha 6$ and a superscript $\beta 4$), and a side group $M_{\alpha 2}$ (with a subscript $\alpha 2$ and a superscript $\beta 4$). The main chain is $M_{\alpha 6}$ (with a subscript $\alpha 6$ and a superscript $\beta 4$).

Structure D: A repeating unit of polyaspartate with side groups $M_{\alpha 2}$, $M_{\alpha 3}$, and $M_{\alpha 6}$ (with a subscript $\alpha 6$ and a superscript $\beta 4$), and a side group $M_{\alpha 2}$ (with a subscript $\alpha 2$ and a superscript $\beta 4$). The main chain is $M_{\alpha 6}$ (with a subscript $\alpha 6$ and a superscript $\beta 4$).

Structure E: A repeating unit of polyaspartate with side groups $M_{\alpha 2}$, $M_{\alpha 3}$, and $M_{\alpha 6}$ (with a subscript $\alpha 6$ and a superscript $\beta 4$), and a side group $M_{\alpha 2}$ (with a subscript $\alpha 2$ and a superscript $\beta 4$). The main chain is $M_{\alpha 6}$ (with a subscript $\alpha 6$ and a superscript $\beta 4$).

Relationships:

- Structure A is converted to Structure B via reaction I.
- Structure B is converted to Structure C via reaction II.
- Structure C is converted to Structure D via reaction III.
- Structure D is converted to Structure E via reaction IV.
- Structure E is converted to Structure F via reaction V.

*: potential phosphorylation site

n : 50-100

m: 10-25

[illegible]

FIG. 4

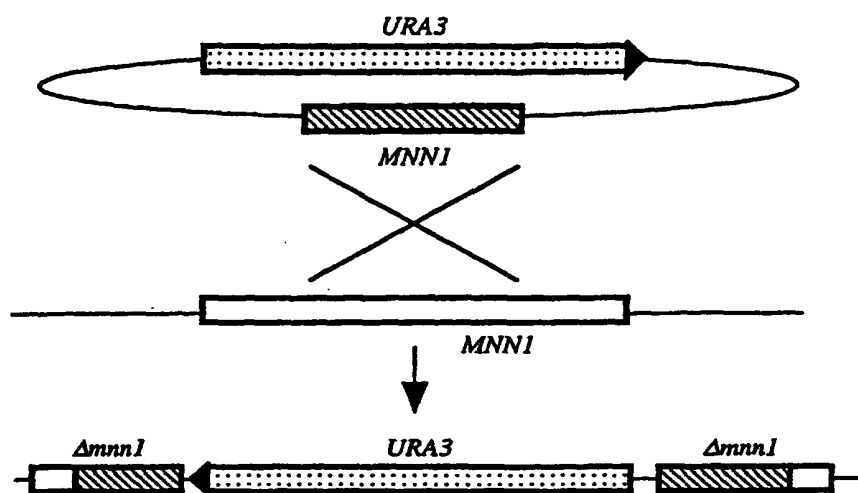


FIG. 5

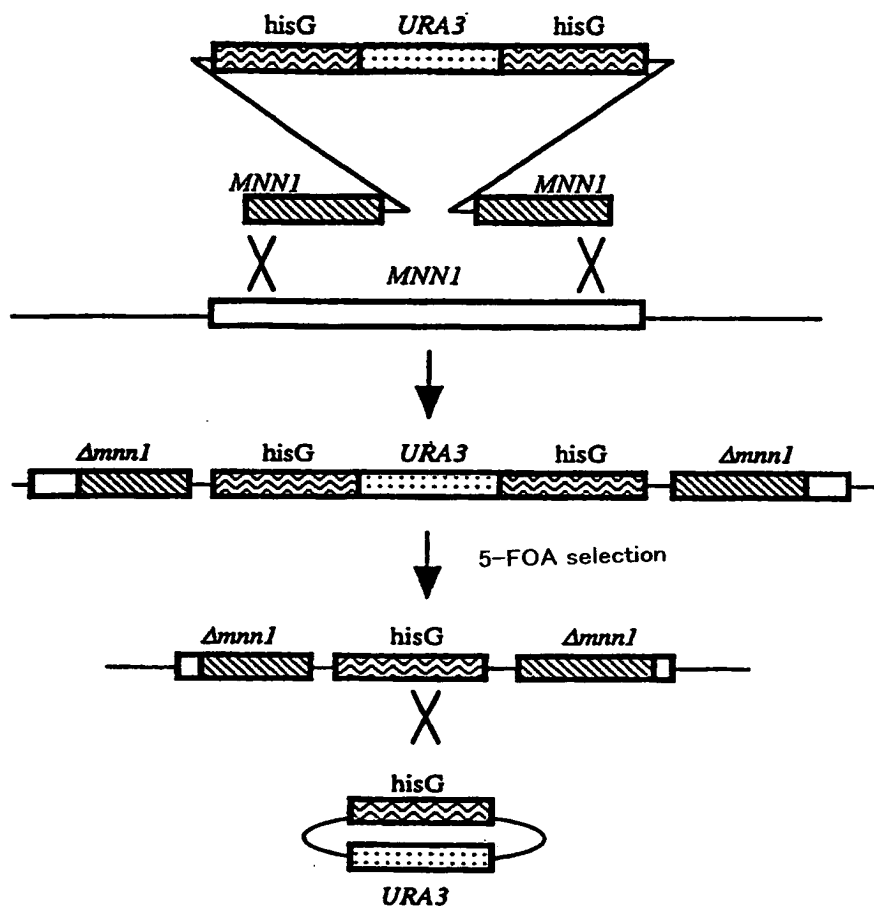
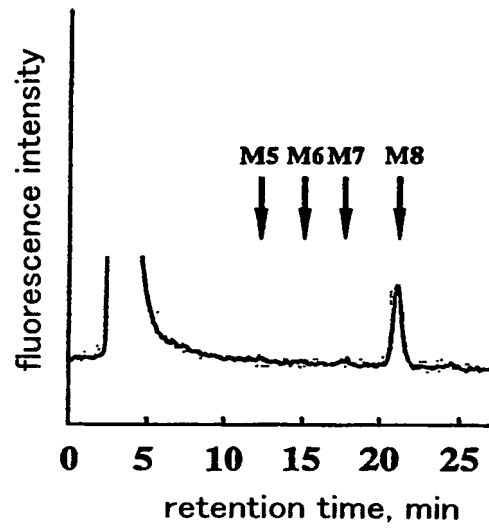


FIG. 6



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FIG. 7

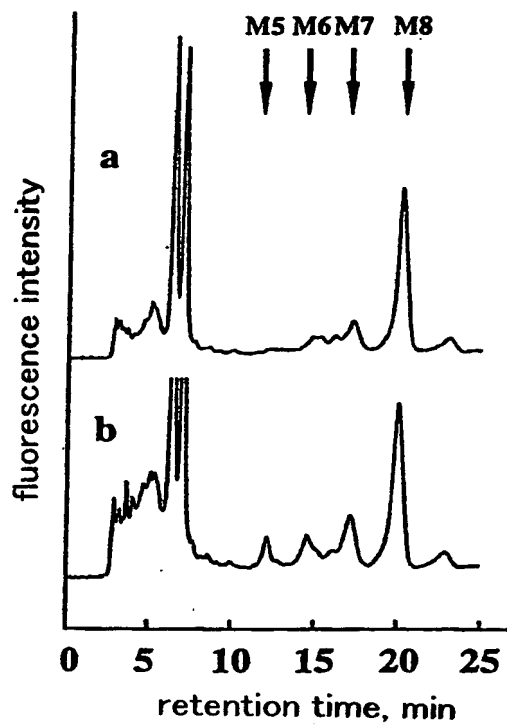


FIG. 8

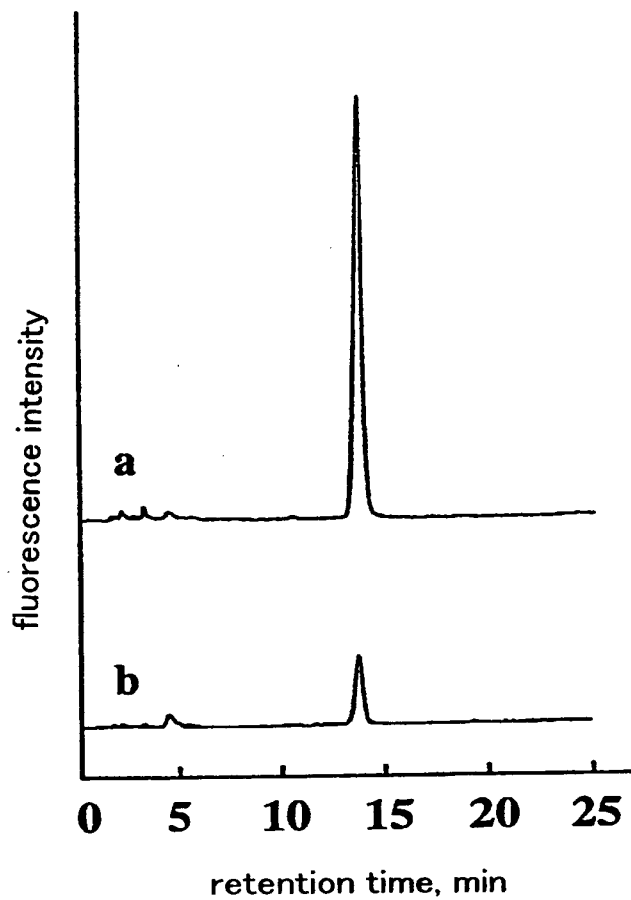


FIG. 9

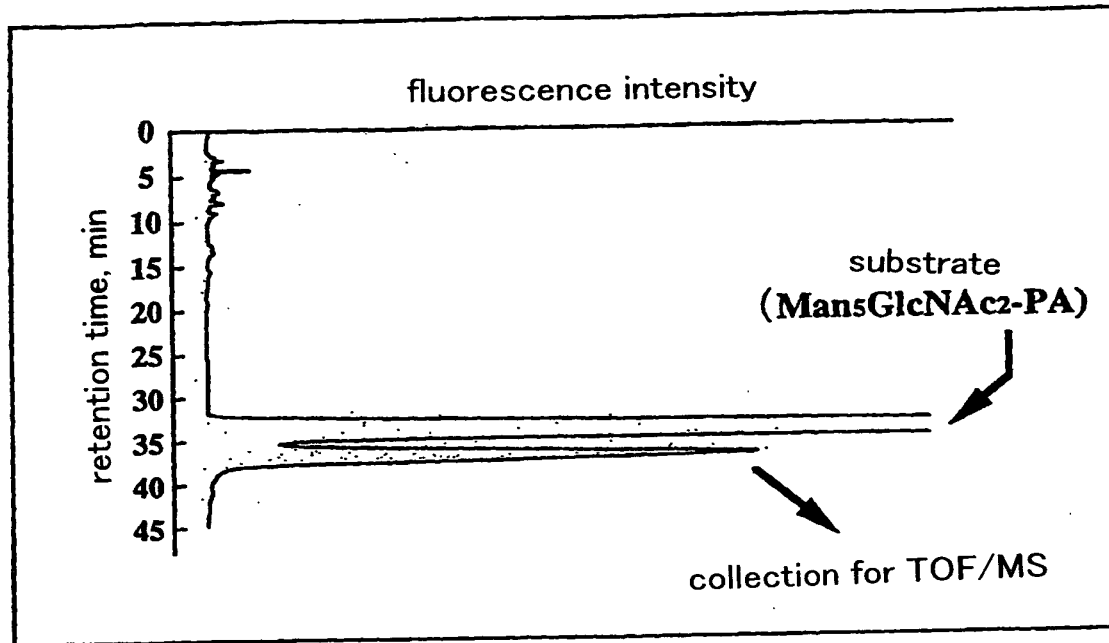


FIG. 10

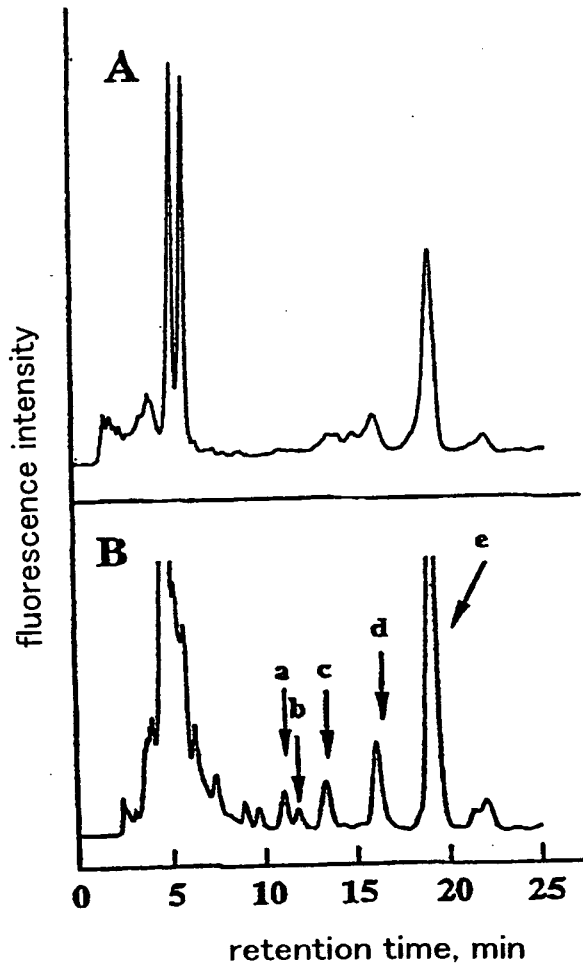


FIG. 11

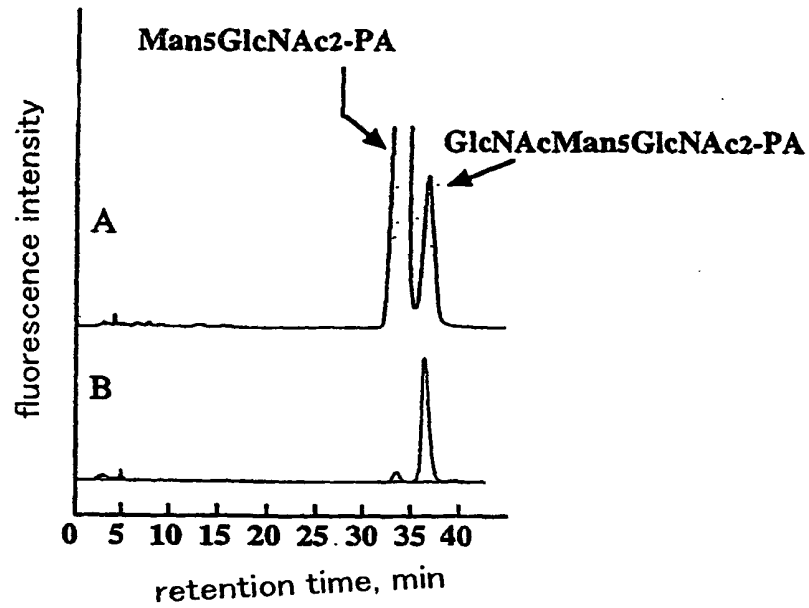


FIG. 12

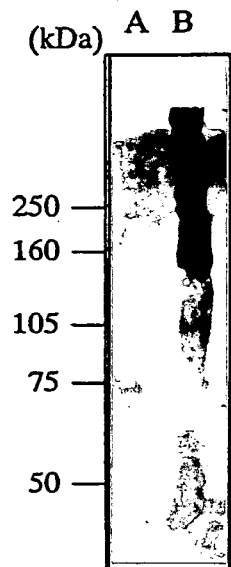


FIG. 13

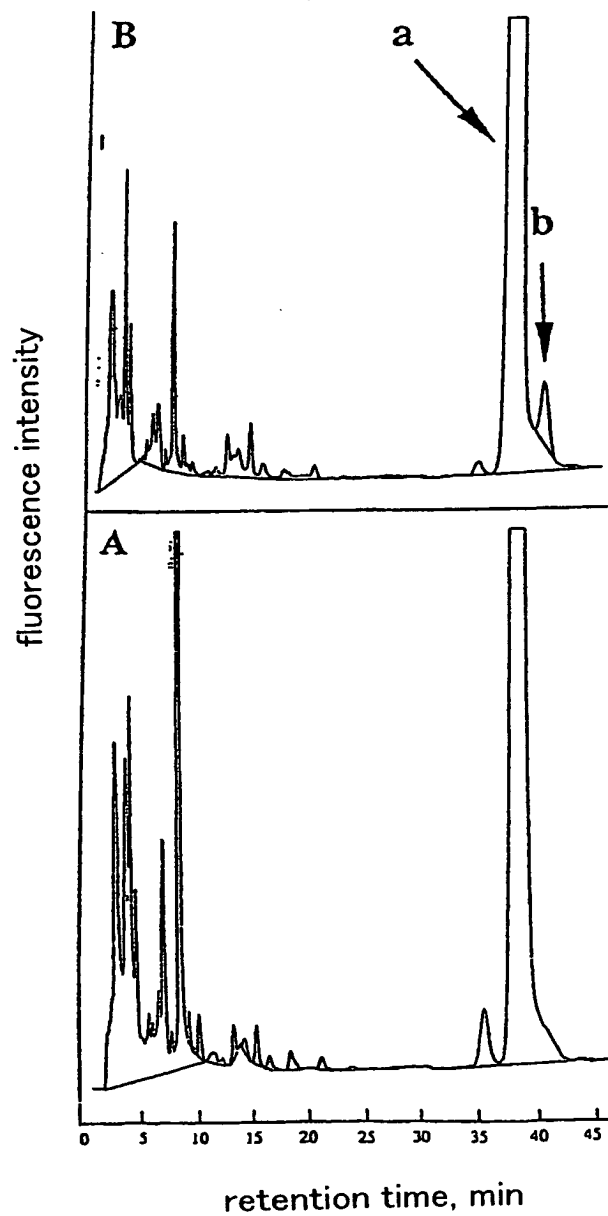


FIG. 14

